

IN THE CLAIMS

1-30. (Cancelled)

31. (Currently amended) A method for evaluating carcinogenicity of an agent, comprising the steps of:

contacting a test agent with a human cell;

determining the level of expression of at least one transcript or its translation product in the human cell after contacting with the agent; wherein the transcript is of a gene selected from a **first group** consisting of genes IG GAMMA-1 CHAIN C REGION (HUMAN), Human 1 g gamma3 heavy chain disease OMM protein mRNA, 274912 MYELIN TRANSCRIPTION FACTOR 1 (Homo sapiens), 152524 CYCLIN-DEPENDENT KINASE INHIBITOR 1 (Homo sapiens), H. sapiens mRNA for 43 kDa inositol polyphosphate 5-phosphatase, Human N-acetylgalactosamine 6-sulphatase (GALNS) gene, exon 14, 155730 KERATIN, TYPE I CYTOSKELETAL 17 (HUMAN), H. sapiens mRNA (clone 9112), kinase related protein, Human placental cDNA coding for 5'nucleotidase (EC3.1.3.5), H. sapiens MLN62 mRNA, Human activated p21cdc42Hs kinase (ack) mRNA, complete cds., 81780 COMPLEMENT C4 PRECURSOR (Homo sapiens), 172486 clone, mRNA for tuberin, or TSC2 gene, Homo sapiens of cardiac alpha-myosin heavy chain gene, KERATIN, TYPE II CYTOSKELETAL 5 (HUMAN); contains MSR1 repetitive element, ~~182000 FK506-BINDING PROTEIN PRECURSOR~~, Human insulin-like growth factor-binding protein-3 gene, complete Cds, clone HL1006d, 72466 ALPHA CRYSTALLIN B CHAIN (HUMAN), Homo sapiens mRNA for serum response factor-related protein, RSRFR2, 198656 HEPATOCYTE GROWTH FACTOR-LIKE PROTEIN PRECURSOR (Homo sapiens), 62461 SMALL NUCLEAR

RIBONUCLEOPROTEIN Particle N (SNRPN), contains MSR1 repetitive element, 155335
 INTEGRIN ALPHA-3 (Homo sapiens), 41792 TUBULIN BETA-2-CHAIN (HUMAN),
 Human estradiol 17 beta-dehydrogenase gene, complete cds, H. sapiens mRNA for
 cystathionine-beta-synthase, Homo sapiens of cardiac alpha-myosin heavy chain gene, Human
 mRNA for thyroglobulin, Human guanine nucleotide regulatory protein (ABR) mRNA,
 complete cds, Human novel growth factor receptor mRNA 3' Cds, ~~142899 DNA-DIRECTED~~
~~RNA-POLYMERASE III LARGEST SUBUNIT~~, Human mRNA for collagen VI alpha-1 C-
 terminal globular domain, Homo sapiens sodium channel type I, beta subunit (SCN1B) mRNA,
 complete cds., ~~50887 GUANINE NUCLEOTIDE DISSOCIATION STIMULATOR~~
~~RALGDS~~, Human cytochrome P450 4F2 (CYP4F2) mRNA, complete cds, Human MAGE-2
 gene exons 1-4, complete cds, H. sapiens mRNA for transforming growth factor alpha, 38251 H
 sapiens HSJ1 mRNA, p53, H. sapiens mRNA for intestine-specific annexin, KERATIN, TYPE
 ICYTOSKELETAL 15 (HUMAN); contains MER20 repetitive element 5065 GROWTH
 ARREST AND DNA-DAMAGE-INDUCIBLE PROTEIN GADD45 (Homo sapiens), Human
 steroidogenic acute regulatory protein (StAR) mRNA, complete cds, LYSYL
 HYDROXYLASE (PLOD), (HUMAN); 151767 FASL RECEPTOR PRECURSOR (Homo
 sapiens), Homo sapiens creatine transporter mRNA, complete cds, KERATIN TYPE I
 CYTOSKELETAL 15 (HUMAN); contains MER20 repetitive element, Human mRNA for
 thyroperoxidase, 275040 HEPATOCYTE GROWTH FACTOR-LIKE PROTEIN
 PRECURSOR (HUMAN), ~~121731 CYTOCHROME P450 IVB1~~, Homo sapiens dopamine
 transporter (SLC6A3) mRNA, complete cds, 139080 COMPLEMENT DECAY-
 ACCELERATING FACTOR 1 PRECURSOR (Homo sapiens), H. sapiens mRNA for caveolin,

Human endogenous retrovirus type C oncovirus sequence, 31481 TYROSINE-PROTEIN KINASE HCK (Homo sapiens), Homo sapiens ribosomal protein S6 kinase 2 (RPS6KA2) mRNA, complete cds, Human Fas antigen (fas) mRNA, complete cds, Human mRNA encoding pregastrin (a regulatory hormone of gastric acid secretin and growth of the gastrointestinal mucosa), H. sapiens mRNA for placental growth factor (PIGF), H. sapiens mRNA for placenta growth factor (PIGF), Human PML-2 mRNA, complete Cds, Human mRNA (KIAA0027) for ORF, partial cds, Human placenta-specific growth hormone mRNA, complete cds, Human high conductance inward rectifier potassium channel alpha subunit mRNA, complete cds, Human cytochrome P450 IID6 (CYP2D6) gene, complete cds, 180447 FIBROBLAST GROWTH FACTOR RECEPTOR 3 PRECURSOR (Homo sapiens), 153585 EBNA-2-NUCLEAR PROTEIN (Epstein-Barr virus), ~~36678 TROPONIN C, ISOFORM 2,~~ 182125 HDL-BINDING PROTEIN, HUMMLC2At; Homo sapiens; 593 base pairs, 80486 LIVER CARBOXYLESTERASE PRECURSOR (HUMAN), ~~121916 NEUTRAL CALPONIN,~~ ~~SMOOTH MUSCLE,~~ Human 11 beta-hydroxysteroid dehydrogenase type II mRNA, complete cds, Homo sapiens interferon regulatory factor 1 gene, complete cds, Human Fas antigen (fas) mRNA, complete cds, NEUTROPHIL OXIDASE FACTOR (p67 PHOX) (HUMAN), Human 11 kd protein mRNA, complete cds, Human semaphorin V mRNA, complete cds, MYELIN TRANSCRIPTION FACTOR 1 (HUMAN), ~~175991 NEURONAL CALCIUM SENSOR 1,~~ 81422 HUMAN SMOOTH MUSCLE ALPHA-ACTIN (AORTIC TYPE), Human mRNA for irp protein (int-1 related protein), Human Fas antigen (fas) mRNA, complete cds, Human beta-migrating plasminogen activator inhibitor 1 mRNA 3' end, 26063 COMPLEMENT C4 PRECURSOR (Homo sapiens), ~~142450 VASCULAR ENDOTHELIAL GROWTH FACTOR~~

~~PRECUSOR~~, Human visinin-like peptide 1 homolog mRNA, complete cds, H. sapiens mRNA for red cell anion exchanger (EPB3, Ae1, Band 3) 3' non-coding region, Human laminin S B3 chain (LAMB3) mRNA, complete cds, Human cytochrome P450 IID6 (CYP2D6) gene, complete cds, Human hexokinase 1 (HK1) mRNA, complete cds, Human mRNA for the MDM2 gene, Human mRNA for cytochrome P-450LTBV, and RYANODINE RECEPTOR, SKELETAL MUSCLE (HUMAN), ~~39052 POTASSIUM CHANNEL PROTEIN EAG, and 124416 SERINE-THREONINE PROTEIN KINASE COT-1,~~ or a **second group** consisting of genes 196105 PLACENTAL CALCIUM-BINDING PROTEIN (HUMAN), 127228 HEAT SHOCK PROTEIN, CHAPERONIN 10, or GroES; MITOCHONDRIAL, H. sapiens Id1 mRNA, 51894 GTP-BINDING NUCLEAR PROTEIN RAN (Homo sapiens), 84680 ATP SYNTHASE ALPHA CHAIN, MITOCHONDRIAL PRECURSOR (HUMAN), Human non-histone chromosomal protein HMG-17 mRNA, complete cds, PHOSPHOGLYCERATE MUTASE, BRAIN FORM (HUMAN), Human mRNA (KIAA0108) or ORF (complete cds) and HepG2 mRNA identical sequence, ~~115413 HEAT SHOCK PROTEIN HSP 84,~~ 78161 PROFILIN I (HUMAN), HUMAN PROTEASOME SUBUNIT HSC10-11, 131036 TRANSFERRIN RECEPTOR PROTEIN (Homo sapiens), 214923 PSORIASIS-ASSOCIATED FATTY ACID BINDING PROTEIN HOMOLOG (HUMAN), Human mRNA (KIAA0098) for ORF (human counterpart of mouse chaperonin containing TCP-1 gene), partial cds, Human mRNA for ORF(KIAA0101), complete cds, ~~274422 ATPASE INHIBITOR, MITOCHONDRIAL,~~ Human hnRNP A2 protein mRNA, 46019 MCM3 HOMOLOG (HUMAN), Human Ku autoimmune antigen gene, complete cds; Homo sapiens pst1 mRNA for pancreatic secretory inhibitor (expressed in neoplastic tissue), Human esterase D mRNA 3'end,

49970 LUPUS LA PROTEIN (HUMAN), H. sapiens mRNA for TRAP beta subunit, 125446
 TRANSCRIPTION INITIATION FACTOR TFIID (Homo sapiens), Human mRNA for human
 homologue of rat phosphatidylethanolamine binding protein, complete cds, 120041 HLA-DR
 ASSOC. PROTEIN I, P31 (also called Ii, In, M1, Dr gamma, XM 1) (Homo sapiens), Human
 protein-tyrosine phosphatase (HU-PP-1) mRNA, partial sequence, Homo sapiens integral
 nuclear envelope inner membrane protein (LBR) gene, complete cds, ~~52626 HYPOTHETICAL~~
~~GTP-BINDING PROTEIN IN PM140-PAC2 INTERGENIC REGION~~, H. sapiens mRNA for
 ATP-citrate lyase, Human mRNA for ORF (KIAA0102), complete cds, 238612 Human
 bumetanide-sensitive NA-K-Cl cotransporter (NKCC1 or BSC2) mRNA, complete cds, 26573
 STATHMIN (Homo sapiens), H. sapiens mRNA for DNA primase (subunit p48), Human c-
 myb mRNA, 3'end, Human superoxide dismutase (SOD3 or EC-SOD) gene, complete cds,
 Human mRNA encoding IMP:pyrophosphate phosphoribosyltransferase E.C. 2.4.2.8, Human
 synexin mRNA, complete cds, Human p62 mRNA, complete cds, Human mRNA for
 mitochondrial 3-oxoacyl-CoA thiolase, complete cds, Human mRNA (K1AA0094) for ORF
 (yeast methionine aminopeptidase-related), partial cds, 204299 REPLICATION PROTEIN A
 14 KD SUBUNIT (HUMAN), H. sapiens mRNA for translin, ~~117708 MYOSIN HEAVY~~
~~CHAIN, CLONE 203~~, Human mRNA (KIAA0088) for ORF (alpha-glucosidase-related), partial
 cds, Human mRNA (KIAA0035) for ORF (rat 140 kd nucleolar phosphoprotein homologue),
 partial cds, Human effector cell protease receptor-1 (EPR-1) gene, partial cds, 112020 C-1-
 TETRAHYDROFOLATE SYNTHASE, CYTOPLASMIC (HUMAN), 40874 TUBULIN
 GAMMA CHAIN (HUMAN), 42829 EUKARYOTIC INITATION FACTOR 4B (Homo
 sapiens), PROFILIN II (HUMAN), 40753 RAN-SPECIFIC GTPASE-ACTIVATING

PROTEIN, ranGAP (Homo sapiens), Human mRNA for ORF (KIAK0002), or HUMAN D-
 TYPE CYCLIN complete cds, ~~428385 HAMSTER RNA FOR CYCLIN B2~~, PYRROLINE-5-
 CARBOXYLATE REDUCTASE (HUMAN), 150169 EUKARYOTIC INITIATION FACTOR
 4E (Homo sapiens), ~~72050 NUCLEOTIDE-SENSITIVE CHLORIDE CHANNEL~~, or HUMAN
 CHLORIDE CHANNEL REGULATORY PROTEIN mRNA, Homo sapiens CD24 signal
 transducer mRNA, complete cds and 3'region, H. sapiens mRNA for cathepsin C (dipeptidyl
 peptidase 1), Homo sapiens monocarboxylate transporter 1 (SLC161A1) mRNA, complete cds,
 68690 U1 SMALL NUCLEAR RIBONUCLEOPROTEIN A (HUMAN), Human serine kinase
 (SRPK1) mRNA, complete cds, 209484 CD9 ANTIGEN (Bos taurus), or HUMAN T245
 PROTEIN, Human glutamate dehydrogenase (GDH) mRNA, complete cds, ~~409334~~
~~NEGATIVE REGULATOR OF MITOSIS~~, HUMAN PROTEIN SYNTHESIS FACTOR
 4C(eIF-4C), H. sapiens mRNA for neuromedin U, Human chondroitin/dermatan sulfate
 proteoglycan (PG40) core protein mRNA, complete cds, H. sapiens mRNA for 2'-5'
 oligoadenylate binding protein, Human mRNA (KIAA0024) for ORF (putative human
 counterpart of Chinese hamster phosphatidylserine synthase gene), complete cds, Human
 MAC30 mRNA, 3'end, 74167 APOLIPOPROTEIN A-11 PRECURSOR (HUMAN), ~~36504~~
~~GTPASE ACTIVATING PROTEIN ROTUND~~, 166353 CLEAVAGE STIMULATION
 FACTOR, 50 KD SUBUNIT (Homo sapiens), 127707 LAMININ BETA-1 CHAIN
 PRECURSOR (HUMAN), Human mRNA (K1AA0097) for ORF (novel protein), complete cds,
~~449556 O-antigen polymerase~~, Homo sapiens E2F-related transcription factor (DP-1) mRNA,
 complete cds, NADH-UBIQUINONE DEHYDROGENASE 24 KD SUBUNIT PRECURSOR
 (HUMAN), Human methylmalonyl CoA mutase (MUT) gene, exon 13, ~~37866 BASIGIN~~

~~PRECURSOR~~, 84443 GA BINDING PROTEIN BETA-1 CHAIN (Homo sapiens), Human erythroblastosis virus oncogene homolog 2 (ets-2) mRNA, complete cds, 53193 26S PROTEASE REGULATORY SUBUNIT 6 (Homo sapiens), S-ADENOSYLMETHIONINE DECARBOXYLASE PROENZYME (HUMAN), 26573 STATHMIN (Homo sapiens), 46827 VAV ONCOGENE (Homo sapiens), Human mRNA (KIAA0074) for ORF (yeast C728 protein-related), partial cds, Human DNA topoisomerase II gene (top2), gene 1, Homo sapiens cDNA clone 253186 3', 151010 EUKARYOTIC PEPTIDE CHAIN RELEASE FACTOR SUBUNIT 1 (Homo sapiens), Human medium-chain acyl-CoA dehydrogenase (ACADM) mRNA, complete cds, and 121357 A49436 CDII=CYCLIN-DEPENDENT KINASE INTERACTOR 1, wherein an agent which decreases the level of expression of a gene in the first group, or an agent which increases the level of expression of a gene in the second group is a potential carcinogen.

32. (Previously presented) The method of claim 31 wherein determining the level of expression of at least two of the transcripts or translation products is performed.

33. (Previously presented) The method of claim 31 wherein determining the level of expression of at least five of the transcripts or translation products is performed.

34. (Previously presented) The method of claim 31 wherein determining the level of expression of at least ten of the transcripts or translation products is performed.

35. (Previously presented) The method of claim 31 wherein determining the level of expression of at least twenty of the transcripts or translation products is performed.

36. (Previously presented) The method of claim 31 wherein determining the level of expression of at least fifty of the transcripts or translation products is performed.

37. (Previously presented) The method of claim 31 wherein determining the level of expression of 70 of the transcripts or translation products is performed.

38. (Previously presented) The method of claim 31 wherein determining the level of expression of 90 of the transcripts or translation products is performed.

39. (Previously presented) The method of claim 31 wherein determining the level of expression of 100 of the transcripts or translation products is performed.

40. (Previously presented) The method of claim 31 wherein determining the level of expression of 125 of the transcripts or translation products is performed.

41. (Previously presented) The method of claim 31 wherein determining the level of expression of 145 of the transcripts or translation products is performed.

42-66. (Cancelled)

67. (New) A method for evaluating carcinogenicity of an agent, comprising the steps of:

contacting a test agent with a human cell;

determining the level of expression of at least one transcript or its translation product in the human cell after contacting with the agent; wherein the transcript is of a gene selected from a **first group** consisting of genes identified by accession numbers H28050, R71505, H19201, T98002, R62459, T97948, H40980, R70008, R51856, and R01072 or a **second group** consisting of genes identified by an accession number T87527, H49652, H29320, T93518, R12588, T70251, R46716, H00297, and R61359, wherein an agent which decreases the level of expression of a gene in the first group, or an agent which increases the level of expression of a gene in the second group is a potential carcinogen.

68. (New) The method of claim 67 wherein determining the level of expression of at least two of the transcripts or translation products is performed.

69. (New) The method of claim 67 wherein determining the level of expression of at least five of the transcripts or translation products is performed.

70. (New) The method of claim 67 wherein determining the level of expression of at least ten of the transcripts or translation products is performed.